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TC 67-8085
SNIE 11-13-68
18 July 1968

SPECIAL NATIONAL INTELLIGENCE ESTIMATE
NUMBER 11-13-68
(Supersedes SNIE 11-10-67)

US INTELLIGENCE CAPABILITIES TO MONITOR CERTAIN
LIMITATIONS ON SOVIET STRATEGIC WEAPONS PROGRAMS



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Submitted by
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DEPUTY DIRECTOR OF CENTRAL INTELLIGENCE

Concurred in by the
UNITED STATES INTELLIGENCE
As indicated overleaf

CIA HISTORICAL REVIEW PROGRAM
RELEASE AS SANITIZED

18 JULY 1968

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01 of 2

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CENTRAL INTELLIGENCE AGENCY

18 July 1968

SUBJECT: SNIE 11-13-68: US INTELLIGENCE CAPABILITIES TO MONITOR
CERTAIN LIMITATIONS ON SOVIET STRATEGIC
WEAPONS PROGRAMS

THE PROBLEM

To estimate the capabilities of US intelligence to monitor by
national means limitations on certain Soviet strategic capabilities
over the next five years or so.

NOTE

The Intelligence Community has been asked to review
SNIE 11-10-67, titled as above, dated 14 February 1967, and to
update that estimate because of the recent Soviet proposal regarding
the discussion of certain arms control measures. In this estimate
we give primary consideration to the ability of intelligence to

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monitor the deployment of certain strategic weapon systems, but we also consider the likelihood of our detecting certain qualitative improvements to various weapon systems.

CONCLUSIONS

A. In the continued absence of a large-scale Soviet program of deception and concealment, we believe that we would almost certainly detect any extensive new deployment in strategic forces, although the Soviets could probably effect small-scale increases without our knowledge. The timing of detection and identification would vary with the nature and size of the program. We probably would identify a land-mobile offensive system, for example, but

[it would be difficult to determine the magnitude of such a force.

B. We would almost certainly detect any large-scale test program, but we could not always expect to assess accurately the test objectives or even the precise nature of the system being tested. Our capabilities are generally better in the case of

- 2 -

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offensive than of defensive weapons. We believe, for example, that we could detect and identify Soviet testing of multiple independently-targeted reentry vehicles (MIRVs) for intercontinental ballistic missiles. We could probably also detect test activity associated with an antiballistic missile (ABM) system, [

]

C. Our capabilities for detecting qualitative improvements in the deployed forces are better in the case of defensive weapons than offensive ones. To optimize a surface-to-air missile (SAM) system for an ABM role would require such extensive changes that some would almost certainly be detected and identified [

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We see no prospect of determining whether MIRVs (if developed) or other significant improvements had been incorporated in deployed offensive missiles.

- 3 -

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D. Soviet employment of deception and concealment on a large-scale would, of course, degrade our capabilities. While we still believe that substantial new deployment would almost certainly be detected, detection would come later in the program.]

E. Factors affecting intelligence collection will vary over the period of this estimate, but intelligence is not expected to be able to guarantee that the Soviets have not violated one or more provisions of an agreement. [

- 4 -

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DISCUSSION

I. US MONITORING CAPABILITIES

1. The basic problems for intelligence, as it relates to verification of a weapons limitation agreement, are to collect information, to interpret it correctly, and to satisfy US decision-makers of the validity of those interpretations in time for them to take appropriate action. No single source of information can be exclusively relied upon for these purposes, although the unique capabilities of overhead photography and signal intelligence will inevitably make them essential sources. Regardless of sources, however, intelligence cannot be expected to guarantee that the Soviets have not violated one or more provisions of an agreement. In general, our confidence in detecting and identifying violations will increase in proportion to the extent of deployment or testing involved.

2. We have generally been successful in identifying new programs during the test phase, and, except for defensive systems, test data has been an important source of information on

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characteristics. It should be remembered, however, that new strategic weapon systems will have been in research and development for several years before they are detected in the test phase. Our collection capabilities are lower with respect to production; [

] In regard to deployment, we have a high degree of confidence in our estimates of current order-of-battle for Soviet strategic forces; the physical magnitude of most of these programs and of their supporting elements has made them readily identifiable.

3. Over the period of this estimate, we believe that our capabilities to collect and analyze information on Soviet strategic programs will continue to improve. [

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Moscow antiballistic missile (ABM) system and the SA-5 (Tallinn system), well before those systems reached initial operational capability (IOC). These systems can be readily identified, and we believe that virtually all sites have been located and that any additional deployment would be detected at an early stage. We recognized the Moscow system as a possible ABM in 1963 and made this estimate firm in 1965; we believe that this system will reach IOC later this year. The Tallinn system was identified in 1964, three years before IOC.^{1/} On the basis of this experience, we believe that we could detect the initial deployment of a new fixed strategic defensive system[

]

6. We cannot, however, guarantee that we could make confident and detailed analyses of the capabilities of a new defensive missile system against ballistic missiles^{1/}

^{1/} On the average, SA-5 complexes have been detected [about 2½ years have been required to bring them to operational status.

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7. Over the next few years, our capabilities to collect information bearing on this subject will probably continue to increase as the result of anticipated improvements in our photographic, electronic, and other data collection systems. [

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B. Mobile Strategic Defensive Systems

8. ABM systems do not lend themselves readily to mobile operations as a means for avoiding detection. For example, to fulfill their functions, launchers should be in or near firing position at all times. Present ABM systems require conspicuous support equipment, particularly large, fixed, phased-array radars for the acquisition of target data. To be effective, an ABM system would have to include a large number of launchers with associated guidance radars. While the use of mobile launchers would make it more difficult for us to determine the full magnitude of deployment, we believe that we would detect and identify a "mobile" system,

[

]

C. Fixed Strategic Offensive Systems

9. We have a high degree of confidence in our ability to detect fixed strategic offensive missile sites. It is highly unlikely that any intercontinental ballistic missile (ICBM) launch complexes remain undetected, and we believe we have accounted for all the launch sites in the medium-range ballistic missile/intermediate-range ballistic missile (MREB/IRBM) force. Virtually

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all operational sites in the present ICBM force were detected []
prior to becoming operational. []

2/ Assuming

the Soviets continue to follow current construction and deployment practices, it is highly unlikely that a strategic missile site would reach operational status before being detected.

10. If the Soviets were to begin deployment of an entirely new fixed strategic offensive missile system requiring a new launcher configuration, we would expect to see the prototype launcher at one of the test ranges []
Test firing activity would almost certainly confirm the existence

2/ []

[] Large single silos are built in groups of 6 and it takes about 17-20 months to bring a group to operational status; for a group of 10 small silos the time is 15-18 months. It is possible that any single silo within either type of group could be ready for firing short of these times if the group launch control facility were operational. []

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- 11 -

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of a new ICBM and reveal its general characteristics. We believe we would also detect test firings of a new IREM or MREM {

} Knowledge of the prototype launcher and test activities would assist us in identifying field deployment of a new missile system { }

11. The Soviets probably could retrofit new or improved ICBMs into old silos without our knowledge. Test activity on the missile ranges would almost certainly alert us to the development of a new missile. {

} With considerable modification, the Soviets could install ICBMs in MREM/IREM silos; we still would not necessarily be able to confirm the fact or extent of a retrofit program.

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D. Land-Mobile Strategic Offensive Systems

12. We define a mobile system as one involving a self-contained missile, erector, and launcher which can move about the countryside and utilize unprepared but presurveyed firing positions unidentifiable to us. Although the Soviets are testing strategic missiles which lend themselves to mobile deployment, we believe that no such weapons have achieved IOC. [

]

13. Supporting facilities, train configuration and the like could probably provide a basis for estimating the general magnitude of a rail-mobile force. It would be more difficult to make such an estimate for a road-mobile system. It would be extremely difficult to establish an accurate order-of-battle on mobile weapons since their positions could be changed frequently and they could be kept under cover. [

] On the other hand, the poor condition of many Soviet highways would limit areas where road-mobile launchers could operate, and rail-mobile launchers would

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have to be deployed on the Soviet railroad network. This would establish a defined though extremely large area for surveillance.

14. Considering all these factors, we recognize that the existence of a Soviet road or rail-mobile missile system might not become known to us in the early stage of deployment. We would, however, probably identify the system. [

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E. Missile-Launching Naval Vessels

15. [

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Historically, nuclear missile submarines have spent about two years of an approximate three year construction cycle on the ways; diesel missile submarines have spent about 10 months of an approximate 20 month construction cycle on the ways. We probably would be able to identify units of a new class prior to delivery to the fleet (i.e., during the 6-12 month fitting-out period after launch),

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16. [

] we believe our current missile submarine order-of-battle is highly accurate. Once new units have joined the fleet they seldom escape detection for very long. [

] While a modest buildup in missile submarine strength could, therefore, escape detection for a time, a more extensive buildup almost certainly would be detected before a significant number of units had joined the fleet.

17. The Soviets could increase the number of launch tubes by modifying existing submarines; we believe that we could detect such modifications during the retrofit period. Our ability to

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distinguish between a new cruise missile submarine and ballistic missile units is high, [

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18. Some Soviet surface ships are equipped with surface-to-surface cruise missiles having a range in excess of 100 nautical miles. There is no evidence that the Soviets have installed ballistic missiles on any surface ship, however, nor do we know of any interest in such a program. Launching equipment for existing Soviet ballistic or cruise missile systems could probably be installed in a surface ship in about 12-18 months. In addition to naval combatants, a large merchant ship or naval auxiliary would be suited for such an installation. [

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] A program to equip a number of ships with these missiles would, of course, increase the probability of detection[] An extensive deployment of vessels of this sort into the Atlantic or Pacific would certainly arouse our suspicion and could lead to detection.

III. QUALITATIVE IMPROVEMENTS TO STRATEGIC WEAPON SYSTEMS

19. In this section we discuss the degree of certainty with which we think we can detect and define the parameters of Soviet efforts to expand their strategic capabilities by improving various offensive and defensive weapon systems.

A. Antiballistic Missile Systems

20. We believe we can identify improvements in deployed ABM systems[]

21. The time it might take to identify and evaluate a Soviet effort to upgrade a SAM system to give it an ABM role will depend on the extent of the modification. To optimize the system for an

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ABM role would require such extensive changes that some would almost certainly be detected and probably would be identified [

] Such a development would require, among other things, acquisition inputs from other systems, a new fire control system and radar, and a new missile. [

] Our capabilities to distinguish between various types of defensive systems will probably continue to increase over the next few years, but we cannot estimate the extent to which this would advance the possible time of identification of a Soviet effort to upgrade a SAM system to give it an ABM role.

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B. Strategic Offensive Missile Systems

22. We believe that any significant improvements to ICBMs would involve full system flight testing to ICBM range. We would almost certainly detect Soviet efforts to improve significantly the accuracy of their ICBMs [

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23. If the Soviets were to develop multiple independently-targeted reentry vehicles (MIRVs) for ICBMs, we believe that their flight testing could be detected []

We probably could distinguish testing of a MIRV system from the testing of multiple reentry vehicles (MRVs) or various types of penetration aids. We believe that we would also detect Soviet development of MIRVs for MRBMs and IRBMs [

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The chances of our detection of the development of MIRVs for submarine-launched ballistic missiles (SLBMs) are [

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24. The testing of strategic weapons such as depressed trajectory ICBMs (DICBMs), a fractional orbit bombardment system (FOBS), and retroed ICBMs (RICBMs), could probably be detected. Based on our experience with the Soviet testing of the SS-X-6, however, we believe that the identification of the particular system being developed might be extremely difficult. Based on this same experience, we believe that multiple orbit testing of a multiple orbit bombardment system (MOBS) would be identifiable. In the unlikely event that the Soviets limited MOBS testing to fractional orbits, however, our ability to identify would be diminished. We believe that development of a reliable and accurate MOBS would require a

[]

25. Confirming deployment of new or improved missiles into existing sites might be possible if extensive modification of the launchers were required during retrofit, but it would be difficult to distinguish between retrofit and other types of missile site work. If the modification required enlarging the size of the launch silos, we would probably detect and identify the program

[] Determining the extent of retrofit of such improvements as MIRVs, fractional orbit, depressed trajectory,

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retroed ballistic, and MOBS into existing missile sites would be virtually impossible.

26. For submarine-launched missiles, we would expect to obtain evidence of their naval association[
] Our capabilities to detect improvements to existing missile systems vary; we could expect to detect improvements in range capability, for example, but probably not in missile accuracy. Alterations to submarines to incorporate new or improved missiles may not be detected.

C. Radically New Weapon Systems

27. It is conceivable that technological advance will bring about some radically new strategic weapon system which is not now foreseeable before the end of the period of this estimate. The Soviets could undertake the development of such a system without our knowledge, and the novelty of a radically new weapon would probably hamper recognition[
] We cannot now predict at what stage it would be recognized as a new system or the degree of success we would have in estimating its characteristics.

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IV. SOVIET CAPABILITIES FOR CONCEALMENT AND DECEPTION

28. The conclusion of an arms control agreement would probably signify that the Soviets had decided to accept, at least for a time, the limitations imposed by such an agreement. If the Soviets should employ concealment or deception to violate the agreement, we believe that their aim would be to alter the strategic balance. Any smaller stakes would hardly justify the risks.

29. In planning to develop or deploy strategic weapons in violation of an arms control agreement, moreover, the Soviets would have to count on successfully concealing the program to a point where they could achieve the desired improvement in their strategic position. They would have to weigh the possible advantages, costs and risks of a major clandestine weapons program against the alternatives of compliance with the agreement or of open abrogation and unconstrained weapons development. If they decided to abrogate, they would almost certainly make secret preparations for a resumption of arms competition in advance of the announcement.

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38. In addition to deception or concealment, the Soviets could attempt direct interference with US reconnaissance capabilities which were essential for monitoring an arms control agreement. The Soviets almost certainly possess a nuclear kill capability against reconnaissance satellites and may have a nonnuclear capability. In addition, there are several means whereby the Soviets could interfere with the effective operation of such satellites. We have elsewhere estimated that the Soviets were unlikely to use such capabilities both because of the possibility of reaction against their space activities and out of concern for the general political problems which such an action might produce. The arms limitation agreement situation would add another consideration against interference with American reconnaissance satellites since the Soviets would almost certainly anticipate that the US would assume that the interference was to prevent detection of a violation.

V. PROBLEMS OF DEMONSTRATING A VIOLATION

39. It is the nature of the intelligence process that much of the evidence upon which intelligence judgments are based is fragmentary, ambiguous, and often circumstantial. [

- 26 -

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Intelligence findings are frequently based on complex systems of analysis in which human judgments play an important role.

40. Our judgments concerning a given subject are based on more than the total body of information collected; they are affected by such factors as our evaluation of the various sources which have contributed, our knowledge of US scientific, engineering, and testing programs, and our understanding of Soviet behavior patterns. The problem of demonstrating violations of an arms limitation agreement, is, therefore, a very real and serious one because it requires not only satisfying responsible US authorities but may also call for arming them with documentation sufficient to prove a case. [

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- 27 -

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41. The determination of whether or how to demonstrate a violation -- to our allies or to world opinion -- would have to be made on a case-by-case basis.

- 28 -

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